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CORRELATION OF LEFT VENTRICULAR NON-COMPACTED/ COMPACTED MASS RATIO AND CLINICAL OUTCOMES IN PATIENTS WITH LEFT VENTRICULAR NON-COMPACTION

ACC Poster Contributions
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Background: The utility of CMR in diagnosing LV non-compaction is well established. However, data is limited regarding any relationship of CMR measures of severity and cardiovascular outcomes.We hypothesize that the ratio of LV non-compacted mass (LVNCM) to compacted mass (LVCM) is correlated with major adverse cardiovascular events (MACE).

Methods: Patients referred for CMR from 01/01/2003 to 6/30/2010 who had CMR diagnosis of LV non-compaction, were included. LVEF, segmental thickness of non-compacted (NC) and compacted myocardium (C), global LVNCM and LVCM were derived. The correlations between these CMR parameters and MACE (heart failure NYHA class III-IV, thromboembolism, ventricular arrhythmia) were analyzed. Image 1 shows the non-compacted and compacted myocardium.

Results: 30 patients met entry criteria, 9 had a MACE. The LVNCM / LVCM ratio was a strong independent predictor of MACE when combined with either LVEF, total segments with NC/C > 2.3, or maximal NC/C ratio (p = 0.008, 0.032, and 0.028 respectively). Of these measures, the LVNCM / LVCM ratio showed the highest correlation to MACE (ROC AUC = .73, compared to .51, .63 and .64 respectively). A LVNCM/LVCM ratio > .7 predicted MACE with sensitivity, specificity, positive and negative predictive values of 89%, 43%, 40% and 90%.

Conclusions: The LVNCM/LVCM ratio shows the strongest correlation with MACE compared to LVEF, total segments with NC/C > 2.3, and maximal NC/C ratio. A ratio > .7 predicted MACE with odds ratio of 6.